UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,239	08/22/2003	Stefan Bertil Ohlsson	2002B117/2	9391

23455 7590 08/17/2005

EXXONMOBIL CHEMICAL COMPANY
5200 BAYWAY DRIVE
P.O. BOX 2149
BAYTOWN, TX 77522-2149

EXAMINER	
BRUENJES, CHRISTOPHER P	
ART UNIT	**PAPER NUMBER**
1772	

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/646,239	OHLSSON, STEFAN BERTIL	
	Examiner	Art Unit	
	Christopher P Bruenjes	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-57 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-57 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 August 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 20030822.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 11-13, 24, and 31-32 are objected to because of the following informalities: The limitation "CDBI" in each of the claims should be written out and not initialed at least in the independent claims, in order to clarify for what exactly "CDBI" is an abbreviation. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 6, 24, 29, and 56, the limitation "second yield" renders the claim vague and indefinite because it is not understood what "second yield" is. The only description of "second yield" in the specification is an arbitrary point on a theoretical graph represented by Figure 1. It is not

understood what the limitation "second yield" represents, is it a certain elongation value, a portion of the film, or a certain tensile stress value. Furthermore, if "second yield" represents a certain elongation value, it is not understood how one of ordinary skill in the art would arrive at the second yield for a particular film in order to determine the tensile stress at that point. Also, if "second yield" is a certain tensile stress value, then any film having a tensile stress greater than that value would have a second yield value at a greater than that value.

Regarding claims 7 and 30, the limitation "first yield" renders the claim vague and indefinite because it is not understood what "first yield" is. The only description of "first yield" in the specification is an arbitrary point on a theoretical graph represented by Figure 1. It is not understood what the limitation "first yield" represents, is it a certain elongation value, a portion of the film, or a certain tensile stress value. Furthermore, if "first yield" represents a certain elongation value, it is not understood how one of ordinary skill in the art would arrive at the first yield for a particular film in order to determine the tensile stress at that point. Also, if "first yield" is a certain tensile stress value, then any film having a tensile stress greater than that

value would have a first yield value at a greater than that value.

Regarding claims 8-10 and 39-41, the limitation "yield plateau" renders the claim vague and indefinite because it is not understood what "yield plateau" is. The only description of "yield plateau" in the specification is a portion of the theoretical graph represented by Figure 1 between the two arbitrary points of first yield and second yield. Furthermore, it is not understood how a film can have "yield plateau" if a "yield plateau" is merely a portion of a line graph. Perhaps a certain property of a film can be represented by a line graph having a yield plateau, but it is not understood how the film itself can have a portion of a line graph. Furthermore, the yield plateau is a representation of a property of the film it is not understood how one of ordinary skill in the art is to determine the first and second yields so that the boundaries of the yield plateau can be determined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-10, 21-23, 45, and 53-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (EP 982362 A1).

Regarding claims 1-7, Takahashi et al anticipate a stretch film comprising at least one layer comprising the composition (A') (p.34, l.6). The composition (A') is a polyethylene copolymer (p.21, l.25). The film has a natural draw ratio of at least 300% (p.34, l.19) and a tensile stress at break of greater than 40MPa (p.34, l.14-15). Takahashi also teaches that the elongation at break is at least 500% (p.34, l.15-16). Therefore, inherently the tensile stress at the natural draw ratio is at least 26MPa, the tensile stress at the second yield is at least 14MPa and the tensile stress at first yield is at least 9MPa, because the tensile stress increases as the elongation increases and if the tensile stress at elongation at break is greater than 40MPa then the tensile stress for the other points of elongation would have a percentage of the maximum and still be greater than the claimed minimum amounts. Regarding claims 8-10, inherently the graph of elongation versus tensile stress would have a yield plateau because the yield plateau is defined in the instant specification as an arbitrary

portion of the graph between the arbitrarily set first and second yields. Depending on where the first and second yield points are chosen on the graphical representation of the elongation versus tensile stress, the slope would necessarily be at least 0.020 MPa per % elongation. Regarding claims 21-23, the film is a monolayer or multilayered film having at least three layers (p.34, l.28-39). Regarding claim 45, the stretch film is used to wrap articles (p.34, l.22-23). Regarding claims 53-55, the stretch film is used to wrap articles, in which the stretch film is provided pre-stretched or is stretched during the step of wrapping the article with the stretch film. Regarding claim 56, Takahashi et al teach a multilayer stretch film comprising a first surface layer, a second layer surface, and a core layer disposed between the first and second surface layers, in which the core layer is formed of the composition (A'), which has a natural draw ratio of at least 250%, a tensile stress at the natural draw ratio of at least 22MPa and a tensile stress at second yield of at least 12MPa (p.34, l.31-39). Regarding claim 57, the multilayered stretch film is used to wrap articles (p.34, l.22-23).

4. Claims 1-22, 24-43, 45-51, and 53-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Lue et al (USPN 6,255,426).

Regarding claims 11, 15-20, and 24, 34-38, Lue et al anticipate a film comprising at least one layer comprising a polyethylene copolymer having a CDBI of at least 70%, a melt index of from 0.1 to 15 g/10min, a density of from 0.910 to 0.930 g/ml, a melt index ratio of from 35 to 80, and an Mw/Mn ratio of from 2.5 to 5.5, wherein the film has a dart impact strength D, a modulus M, where M is the arithmetic mean of the machine direction and transverse direction 1% secant moduli, and a relation between D in g/mil and M in psi such that D is greater than or equal to $2.0x[100+e^{(11.71-0.000268xM+2.183x10^{-9}xM^2)}]$, which is equivalent to the formula claimed (see abstract and col.4, l.48-50 and l.60). Regarding claims 1-10, 24-30, and 39-41, note the limitation "wherein the film has a natural draw ratio of at least 250%, 275%, or 300%, a tensile stress at the natural draw ratio of at least 22, 24, or 26MPa, and a tensile stress at second yield of at least 12MPa or 14MPa" does not require the film to actual be drawn or stretched, it merely states that the film has these properties. In this case, because the film of Lue et al has the exact same composition and is made by the same process, the film inherently has the same

natural draw ratio and tensile stress values at the same elongation values, because if the composition is physically the same it must have the same properties. See MPEP 2112.01. Therefore, the natural draw ratio of the film is inherently at least 300%, the tensile stress at the natural draw ratio is inherently at least 26MPa, the tensile stress at the second yield is at inherently at least 14MPa, the tensile stress at first yield is inherently at least 9MPa, and the film inherently has a yield plateau with a linear portion having a slope of at least 0.020 MPa per %elongation. Regarding claims 12-13 and 31-32, the CDBI is at least 85% (col.9, l.43). Regarding claims 14 and 33, the melt index is from 0.3 to 10 g/10min (col.4, l.57). Regarding claims 21-22 and 42-43, the film is a monolayer film (col.12, l.11) or the film has more than one layer, which anticipates at least two layers (col.12, l.17). Regarding claims 45-51, the film is wrapped around articles when used as garbage and shopping bags or shrink film (col.10, l.57-59). Regarding claims 53-55, the film in the form of a shrink film is wrapped around an article before shrinking, and that film must be pre-stretched before shrinking, therefore, a stretching force must be applied to the film before the step wrapping the article with the film if the film is made to shrink onto the article.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-22, 24-43, 45-51, and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lue et al (USPN 6,255,426) in view of Wong et al (USPN 6,358,457).

Lue et al teach a film comprising at least one layer comprising a polyethylene copolymer having a CDBI of at least 70%, a melt index of from 0.1 to 15 g/10min, a density of from 0.910 to 0.930 g/ml, a melt index ratio of from 35 to 80, and an

Mw/Mn ratio of from 2.5 to 5.5, wherein the film has a dart impact strength D, a modulus M, where M is the arithmetic mean of the machine direction and transverse direction 1% secant moduli, and a relation between D in g/mil and M in psi such that D is greater than or equal to $2.0x[100+e^{(11.71-0.000268xM+2:183x10^{-9}xM^2)}]$, which is equivalent to the formula claimed (see abstract and col.4, l.48-50 and l.60). Regarding claims 12-13 and 31-32, the CDBI is at least 85% (col.9, l.43). Regarding claims 14 and 33, the melt index is from 0.3 to 10 g/10min (col.4, l.57). Regarding claims 21-22 and 42-43, the film is a monolayer film (col.12, l.11) or the film has more than one layer, which anticipates at least two layers (col.12, l.17). Regarding claims 45-51, the film is wrapped around articles when used as garbage and shopping bags or shrink film (col.10, l.57-59). Regarding claims 53-55, the film in the form of a shrink film is wrapped around an article before shrinking, and that film must be pre-stretched before shrinking, therefore, a stretching force must be applied to the film before the step wrapping the article with the film if the film is made to shrink onto the article.

Regarding claims 1-10, 24-30, and 39-41, Lue et al fail to explicitly teach that the film has a particular natural draw ratio, and tensile stress at separate elongation values. Note the limitation "wherein the film has a natural draw ratio of at

least 250%, 275%, or 300%, a tensile stress at the natural draw ratio of at least 22, 24, or 26MPa, and a tensile stress at second yield of at least 12MPa or 14MPa" does not require the film to actually be drawn or stretched, it merely states that the film has these properties. Wong et al teach that the natural stretch ratio is determined by factors such as the polymer composition, morphology caused by the process of forming the film (col.7, l.4-7). In this case, the film of Lue et al has the exact same composition and is made by the same process. Lue et al teach that the film is used as a shrink film (col.10, l.57), which obviously must be stretched in order to allow the film to shrink.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made, since the film is formed of the same composition and made by the same process, would obviously have a natural draw ratio of the film of at least 300%, a tensile stress at the natural draw ratio of at least 26MPa, a tensile stress at the second yield of at least 14MPa, a tensile stress at first yield of at least 9MPa, and the film obviously has a yield plateau with a linear portion having a slope of at least 0.020 MPa per %elongation, as taught by Wong et al.

6. Claims 23, 44, 51, and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lue et al (USPN 6,255,426) alone or in combination with Wong et al (USPN 6,358,457) in view of Takahashi et al (EP 982362 A1).

Lue et al alone or in combination with Wong et al teach all that is claimed in claims 1 and 24 and teach that the film is used to wrap articles and is made of more than one layer, but fails to teach that the film is formed having at least three layers. However, Takahashi et al teach that it is well known that packaging films are formed from polyethylene copolymers as monolayer films or multilayer films (p.34, l.28-30). Takahashi et al also teaches other layers are added to polyethylene copolymer films in order to provide additional properties, such as making one surface of the film tacky and the other non-tacky. Takahashi et al teach that in order to provide these properties two additional layers are used, one on either side, of the polyethylene copolymer film (p.34, l.31-39). One of ordinary skill in the art at the time Applicant's invention was made would have recognized that a layer is added on either side of a polyethylene copolymer film used in packaging in order to give that film one tacky surface and one non-tacky surface, as taught by Takahashi et al.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to form the film of Lue et al having more than one layer, as a three layered film with the polyethylene copolymer forming the intermediate layer, depending on the intended end result of the film, as taught by Takahashi et al.

7. Claims 11-20, 24-44, and 46-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al (EP 982362 A1) in view of Lue et al (USPN 6,255,426).

Regarding claims 24-30, Takahashi et al teach a stretch film comprising at least one layer comprising the composition (A') (p.34, l.6). The composition (A') is a polyethylene copolymer (p.21, l.25). The film has a natural draw ratio of at least 300% (p.34, l.19) and a tensile stress at break of greater than 40MPa (p.34, l.14-15). Takahashi also teaches that the elongation at break is at least 500% (p.34, l.15-16). Therefore, inherently the tensile stress at the natural draw ratio is at least 26MPa, the tensile stress at the second yield is at least 14MPa and the tensile stress at first yield is at least 9MPa, because the tensile stress increases as the elongation increases and if the tensile stress at elongation at break is greater than 40MPa then the tensile stress for the

other points of elongation would have a percentage of the maximum and still be greater than the claimed minimum amounts. Regarding claims 39-41, inherently the graph of elongation versus tensile stress would have a yield plateau because the yield plateau is defined in the instant specification as an arbitrary portion of the graph between the arbitrarily set first and second yields. Depending on where the first and second yield points are chosen on the graphical representation of the elongation versus tensile stress, the slope would necessarily be at least 0.020 MPa per % elongation. Regarding claims 42-44, the film is a monolayer or multilayered film having at least three layers (p.34, l.28-39). Regarding claims 46-52, the stretch film is used to wrap articles (p.34, l.22-23).

Regarding claims 11-20, 24, and 31-38, Takahashi et al fail to explicitly teach the polyethylene copolymer having the CDBI, melt index, density, melt index ratio, Mw/Mn ratio, dart impact strength, and modulus values claimed. However, Takahashi et al does teach a polyethylene copolymer having similar properties and teaches that the polyethylene copolymer should have high strength, good appearance, excellent in productivity, packaging properties, and handling properties (p.34, l.40-42). Lue et al teach a specific polyethylene copolymer having all of the claimed properties as shown above, is substituted for other

polyethylenes because it has improved shear thinning behavior, which assists in the processing of the polymer in the molten state, which improves productivity and handling properties, and because it has improved impact strength, which is a packaging property because it prevents the film from breaking upon impact form the article inside the film or the outside environment (p.1, l.8-15). One of ordinary skill in the art would have recognized that a polyethylene copolymer with improved shear thinning behavior and impact strength is substituted for another polyethylene copolymer in the art of packaging films, because the art of packaging films are concerned with improvements to productivity, packaging properties, and handling properties, including ease of production and impact strength, as taught by Takahashi et al.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to substitute the polyethylene copolymer of Lue et al for the polyethylene copolymer of Takahashi et al, in order to improve the ease of production and impact strength of the packaging film, as taught by Lue et al.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yap et al (USPN 6,482,532).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes
Examiner
Art Unit 1772

CPB CPB
August 12, 2005

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 8/15/05